

## LISTING OF CLAIMS:

1                    1. (Currently amended) A method of operating a torque transmitting  
2    apparatus which receives torque from a rotary output element of a prime mover  
3    and transmits torque to a rotary input element of an automatic transmission in a  
4    power train of a vehicle, wherein the torque transmitting apparatus comprises a  
5    hydrokinetic torque converter and a slip clutch is arranged in parallel to transmit  
6    torque between the output and input elements ~~in parallel with a slip clutch~~ and  
7    wherein the amount magnitude of torque being transmitted by the clutch is  
8    controlled selectively variable by a computerized regulating unit, the method  
9    comprising the steps of:  
10                    regulating ~~the transmission~~ the amount of torque to be transmitted by  
11    the clutch as a function of the magnitude of torque being transmitted by the output  
12    element of the prime mover;  
13                    calculating what amount of force will have to be applied to the clutch, so  
14    that the clutch will transmit said predetermined amount of torque, wherein the  
15    amount of torque is determined and the amount of force is calculated so that the  
16    clutch operates with a desired minimum amount of slip, and  
17                    ~~including ascertaining and adaptively applying to the clutch a variable~~  
18    ~~force for the transmission of a predetermined torque by the clutch with attendant~~  
19    ~~automatic selection of a minimum slip between a torque receiving and torque~~  
20    ~~transmitting part of the power train; and carrying out a compensation, particularly~~  
21    ~~long range compensation, for eventual differences between the predetermined and~~

22 ~~actual torques being transmitted by the clutch for long-term departures of the~~  
23 ~~torque actually transmitted by the clutch from the predetermined torque.~~

1                   2. (Currently amended) The method of claim 1, wherein the amount of  
2 torque to be transmitted by the clutch as a function of the RPM of torque  $M_{pm}$  being  
3 generated at the output element of the prime mover is ascertained calculated by  
4 the regulating unit in accordance with the equation  
5                   
$$M_{clutch} = k_{me} \cdot k_{corr} \cdot (M_{pm} + M_{corr\ pm}) + M_{corr\ wu}, \quad \text{wherein}$$
  
6  $M_{clutch}$  is the torque to be transmitted by the clutch,  
7  $k_{me}$  is a torque dividing factor ~~which is at least substantially constant within~~  
8 ~~the entire operating range of the power train~~ for apportioning respective  
9 amounts of torque being transmitted by the slip clutch and the  
10 hydrokinetic torque converter,  
11  $k_{corr}$  is a correction factor ~~for correction of multiplicative errors~~ that is  
12 determined based on a current operating point of the power train,  
13  $M_{corr\ pm}$  is a correction torque to compensate for additive errors ~~added to the of~~  
14  $M_{pm}$ , and  
15  $M_{corr\ wu}$  is a correction torque compensating for additive errors ~~added to~~ of the  
16 clutch torque  $M_{clutch}$ ,  
17 wherein said desired minimum amount of slip ~~between torque receiving and torque~~  
18 ~~transmitting parts of the power train being~~ occurs automatically selected as a  
19 function of said torque dividing factor  $k_{me}$ , and long-term departures of actual from  
20 theoretical values for  $M_{pm}$  and  $M_{clutch}$  are compensated by and long-range

21 ~~compensation for any departure of actual torques from the predetermined torques~~  
22 ~~being carried out in dependency upon the correction factor  $k_{corr}$  and correction~~  
23 ~~torques  $M_{corr\ pm}$  and  $M_{corr\ wu}$ .~~

1 3. (original) The method of claim 2, wherein the torque dividing factor  
2  $k_{me}$  is a function of the RPM of the rotary output element.

1 4. (original) The method of claim 2, wherein the torque dividing factor  
2  $k_{me}$  is a function exclusively of the RPM of the rotary output element.

1 5. (original) The method of claim 2, wherein the torque dividing factor  
2  $k_{me}$  is a function of the RPM and of the torque being transmitted by the rotary  
3 output element.

1 6. (Currently amended) The method of claim 4 2, wherein the torque  
2 dividing factor  $k_{me}$  is a function of the RPM and torque being transmitted by the  
3 prime mover.

1 7. (original) The method of claim 1, wherein the magnitude of the  
2 torque being transmitted by the clutch is variable by a pressure differential between  
3 two bodies of a hydraulic fluid one of which is confined in a first compartment  
4 between a housing of the torque converter and the clutch and the other of which is  
5 confined in a second compartment between the housing and the clutch.

1                   8. (original) The method of claim 1, wherein the prime mover is a  
2     combustion engine and the operating condition of the power train is a function of at  
3     least one of a plurality of variable parameters including (a) the RPM of the rotary  
4     output element and the position of a throttle control lever of the vehicle, (b) the  
5     RPM of the rotary output element and the rate of admission of fuel to the engine,  
6     (c) the RPM of the rotary output element and the subatmospheric pressure in a  
7     suction pipe of the engine, and (d) the RPM of the rotary output element and the  
8     duration of fuel injection into the engine.

1                   9. (currently amended) The method of claim 1, wherein ~~said regulating~~  
2     ~~step includes shifting from the transmission by the clutch of a first torque to the~~  
3     ~~transmission of a different second torque with a delay which is a function of a~~  
4     variable parameter ~~denoting~~ affecting the division of torque being transmitted by  
5     ~~the rotary output element of the prime mover~~ into a first torque being transmitted by  
6     the torque converter and a second torque being transmitted by the clutch is  
7     changed from a current value to a new value with a time delay.

1                   10. (original) The method of claim 9, wherein the variable parameter is  
2     a pressure differential between two bodies of fluid in the torque converter at  
3     opposite sides of a pressure plate of the clutch.

1                   11. (original) The method of claim 9, wherein the variable parameter is  
2     variable as a function of a difference between the RPM of the rotary output element

3 and the RPM of the rotary input element.

1 12. (original) The method of claim 9, wherein the variable parameter is  
2 variable as a function of a gradient of the RPM of the rotary output element.

1 13. (original) The method of claim 9, wherein the variable parameter is  
2 a pressure differential between two bodies of hydraulic fluid in the torque converter  
3 at opposite sides of a pressure plate of the clutch, the pressure differential being  
4 variable by one of (a) a PI regulator and (b) a PID regulator.

1 14. (Currently amended) The method of claim 13, wherein the variation  
2 of the pressure differential by the one regulator ~~can~~ cannot be unequivocally  
3 defined by an ~~a non~~-analytical technique.

1 15. (currently amended) The method of claim 1, wherein the magnitude  
2 of torque being transmitted by the clutch is variable by a pressure differential  
3 between two bodies of hydraulic fluid confined in a housing of the torque converter  
4 at opposite sides of a pressure plate of the clutch and the pressure differential is  
5 variable as a result of scanning a characteristic curve and utilizing the thus  
6 obtained signals to determine differences between actual and desired pressure  
7 differentials, said regulating step further comprising eliminating said differences by  
8 establishing an integrating feedback loop ~~I return flow of fluid from one of the~~  
9 ~~compartments into the other of the compartments,~~ the variation of pressure

10 differential not being unequivocally definable by an ~~a non~~-analytical technique.

1 16. (original) The method of claim 15, wherein the signals are  
2 generated as a result of variable flow of fluid between the two bodies of fluid  
3 through an adjustable valve.

1 17. (original) The method of claim 1, wherein the magnitude of torque  
2 being transmitted by the clutch is variable by a pressure differential between two  
3 bodies of hydraulic fluid confined in the torque converter at opposite sides of a  
4 pressure plate of the clutch and the pressure differential is variable by one of (a) a  
5 PI regulator, (b) an I regulator and (c) a PID regulator.

1 18. (original) The method of claim 17, wherein signals are generated as  
2 a result of variable flow of hydraulic fluid between the two bodies of fluid as a  
3 function of one of (a) a duty factor and (b) a fluid flow through an adjustable valve,  
4 the variation of pressure differential being unequivocally definable by a non-  
5 analytical technique.

1 19. (original) The method of claim 1, wherein the step of carrying out  
2 compensation includes monitoring the actual torques being transmitted by the  
3 clutch and comparing the monitored actual torques with reference values.

1 20. (original) The method of claim 1, wherein the step of carrying out

2 compensation includes computing the torque being transmitted by the torque  
3 converter on the basis of the characteristics of the torque converter and  
4 determining the actual ratio of torques being transmitted by the torque converter  
5 and the clutch.

1 21. (currently amended) The method of claim 1, wherein the amount of  
2 torque to be transmitted by the clutch as a function of the ~~RPM of~~ torque being  
3 generated at the output element of the prime mover is ~~ascertained~~ calculated by  
4 the regulating unit in accordance with the equation  
5 
$$M_{\text{clutch}} = k_{\text{me}} \cdot k_{\text{corr}} \cdot (M_{\text{pm}} + M_{\text{corr pm}}) + M_{\text{corr wu}},$$
 wherein  
6  $M_{\text{clutch}}$  is the torque to be transmitted by the clutch,  
7  $k_{\text{me}}$  is a torque dividing factor ~~which is at least substantially constant within~~  
8 ~~the entire operating range of the power train~~ for apportioning respective  
9 amounts of torque being transmitted by the slip clutch and the  
10 hydrokinetic torque converter,  
11  $k_{\text{corr}}$  is a correction factor ~~for correction of multiplicative errors that is~~  
12 determined based on a current operating point of the power train,  
13  $M_{\text{corr pm}}$  is a correction torque to compensate for additive errors ~~added to the of~~  
14  $M_{\text{pm}}$ , and  
15  $M_{\text{corr wu}}$  is a correction torque compensating for additive errors ~~added to of~~ the  
16 clutch torque  $M_{\text{clutch}}$ ,  
17 wherein said desired minimum amount of slip ~~between torque receiving and torque~~  
18 ~~transmitting parts of the power train being~~ occurs automatically selected as a

19 function of said torque dividing factor  $k_{me}$ , and long-term departures of actual from  
20 theoretical values for  $M_{pm}$  and  $M_{clutch}$  are compensated by and long-range  
21 ~~compensation for any departure of actual torques from the predetermined torques~~  
22 ~~being carried out in dependency upon the correction factor  $k_{corr}$  and correction~~  
23 ~~torques  $M_{corr pm}$  and  $M_{corr wu}$ , the differences between the actual and predetermined~~  
24 ~~torque being transmitted by the clutch being attributable to at least one of (a)~~  
25 ~~multiplicative errors ( $k_{corr} \neq 0$ ,  $M_{corr pm} = 0$ ,  $M_{corr wu} = 0$ ), (b) errors additive to prime~~  
26 ~~mover torque ( $k_{corr} = 0$ ,  $M_{corr pm} \neq 0$ ,  $M_{corr wu} = 0$ ), (c) errors additive to the clutch~~  
27 ~~torque ( $k_{corr} \neq 0$ ,  $M_{corr pm} = 0$ ,  $M_{corr wu} \neq 0$ ), (d) multiplicative errors and additive~~  
28 ~~errors to prime mover torque ( $k_{corr} \neq 0$ ,  $M_{corr pm} \neq 0$ ,  $M_{corr wu} = 0$ ), (e) errors~~  
29 ~~multiplicative and additive to prime mover torque ( $k_{corr} \neq 0$ ,  $M_{corr pm} = 0$ ,  $M_{corr wu} \neq 0$ )~~  
30 ~~and (f) errors multiplicative of and additive to prime mover torque and clutch torque~~  
31 ~~( $k_{corr} \neq 0$ ,  $M_{corr pm} \neq 0$ ,  $M_{corr wu} \neq 0$ ), said step of carrying out compensation taking~~  
32 ~~place with a time constant of several seconds to thus impart to the step of carrying~~  
33 ~~out compensation a purely adaptive character.~~

1 22. (currently amended) The method of claim 1, wherein the prime  
2 mover is operable at a plurality of speeds and further comprising the step of  
3 utilizing signals denoting when a desired acceleration of the prime mover is  
4 signaled by an operator of the vehicle to increase the slip of the clutch as a result of  
5 is increased through a reduction of a factor  $k_{me}$  denoting the division of torque  
6 being transmitted by the rotary output element into first and second torques  
7 respectively transmitted by the torque converter and the clutch with attendant



8     establishment of additional ~~spare torque transmittable~~ , so that the torque boost  
9     offered by the torque converter is available as an additional torque reserve.

1                    23. (currently amended) The method of claim 1, wherein the  
2     transmission has a plurality of drive ratios and the torque-transmitting apparatus  
3     has a combined slip resulting from ~~said regulating step includes utilizing~~ the slip of  
4     the clutch and from a less than perfect torque-transmitting efficiency of the torque  
5     converter, and wherein at each of said drive ratios said combined slip is determined  
6     primarily by the slip of the clutch, so that as a primary factor and the efficiency of  
7     the torque converter ~~as a secondary~~ becomes a less important factor for the  
8     transmission of torque from the rotary output element to the rotary input element to  
9     ~~thus permit the utilization of a~~ so that the torque converter ~~operating with~~ can be  
10    optimized for a high stall speed and having a wide torque conversion range.

24. (canceled)

1                    25. (currently amended) A method of operating a torque transmitting  
2     apparatus which receives torque from a rotary output element of a prime mover,  
3     ~~such as a combustion engine,~~ and transmits torque to a rotary input element of an  
4     automatic transmission in a power train of a vehicle, wherein a hydrokinetic torque  
5     converter is arranged to transmit torque between the output and input elements in  
6     parallel with a slip clutch ~~and,~~ wherein the magnitude of torque being transmitted  
7     by the clutch is ~~variable~~ detectable by a monitoring unit in conjunction with a central

8 computer unit, and wherein the application of force to, and hence the magnitude of  
9 torque being transmitted by, the clutch is ~~selectively regulatable~~ controllable by the  
10 computer unit, comprising the steps of:

11 (a) ascertaining the magnitude of torque to be transmitted by the clutch  
12 in dependency upon the operating condition of the power train in accordance with  
13 the equation

14 
$$M_{\text{clutch}} = k_e \cdot k_{\text{corr}} \cdot M_{\text{pm}}, \text{ wherein}$$

15  $k_e = k_{\text{me}}$  ~~is denoting a torque dividing factor which is at least substantially constant~~  
16 ~~within the entire operating range of the power train for apportioning~~  
17 ~~respective amounts of torque being transmitted by the slip clutch and the~~  
18 ~~torque converter,~~

19  $k_{\text{corr}}$  is a correction factor that is dependent on a current operating point of the  
20 power train,

21  $M_{\text{clutch}}$  is the torque being transmitted by the clutch and

22  $M_{\text{pm}}$  is the torque being transmitted by the rotary output element of the prime  
23 mover,

24 (b) ascertaining the magnitude of the force to be applied to the clutch for  
25 the transmission of a predetermined torque, and

26 (c) applying the thus ascertained force to the clutch,

27 ~~with attendant automatic selection of~~ wherein the slip between the output and input  
28 elements adjusts itself automatically as a function of the torque dividing factor  $k_e$   
29 and possible deviations of an individual power train from an ideal behavior are  
30 corrected by compensation for eventual departures from the desired torque

31 ~~transmission, as a function of the correction factor  $k_{corr}$ , due to the characteristics of~~  
32 ~~the selected power train.~~

1           26. (currently amended) A method of operating a torque transmitting  
2 apparatus which receives torque from a rotary output element of a prime mover,  
3 ~~such as a combustion engine~~, and transmits torque to a rotary input element of an  
4 automatic transmission, wherein a hydrokinetic torque converter is arranged to  
5 transmit torque between the output and input elements in parallel with a slip clutch  
6 and wherein the magnitude of torque being transmitted by the clutch is selectively  
7 variable detectable by a monitoring device in conjunction with a central computer  
8 unit, comprising the steps of:

9           (a) ascertaining the magnitude of torque to be transmitted by the clutch  
10 in dependency upon the operating condition of the power train in accordance with  
11 the equation

12 
$$M_{clutch} = k_e \cdot k_{corr} \cdot M_{pm} , \text{ wherein}$$

13  $k_e = k_{me}$  ~~is denoting~~ a torque dividing factor which is independent of a  
14 characteristic field of the prime mover,

15  $k_{corr}$  is a correction factor that is dependent on a current operating point of the  
16 power train, and

17  $M_{pm}$  is the torque being transmitted by the prime mover,

18           (b) ascertaining the magnitude of the force to be applied to the clutch for  
19 the transmission of a predetermined torque, and

20           (c) applying the thus ascertained force to the clutch,

21 ~~with attendant automatic selection of wherein~~ the slip between the output and input  
22 elements adjusts itself automatically as a function of the torque dividing factor  $k_e$   
23 and possible deviations of an individual power train from an ideal behavior are  
24 corrected by compensation for eventual departures from the desired torque  
25 ~~transmission, as a function of the correction factor  $k_{corr}$ , due to the characteristics of~~  
26 ~~the selected power train.~~

1 27. (currently amended) A method of operating a torque transmitting  
2 apparatus, ~~particularly in a power train of a motor vehicle,~~ which receives torque  
3 from a rotary output element of a prime mover, ~~such as a combustion engine,~~ and  
4 transmits torque to a rotary input element of an automatic transmission, wherein a  
5 hydrokinetic torque converter is arranged to transmit torque between the output  
6 and input elements in parallel with a slip clutch and wherein the magnitude of  
7 torque being transmitted by the clutch is ~~selectively variable~~ detectable by a  
8 monitoring device in conjunction with a central computer unit, comprising the steps  
9 of

10 (a) ascertaining the magnitude of torque  $M_{clutch}$  to be transmitted by the  
11 clutch in dependency upon the operating condition of the torque transmitting  
12 apparatus in accordance with the equation

13 
$$M_{clutch} = k_e \cdot k_{corr} \cdot M_{pm}, \text{ wherein } k_e = k_{me}$$

14  $k_e = k_{me}$  ~~is denoting~~ a torque dividing factor which is dependent only upon the

15 RPM of the output element of the prime mover,

16  $k_{corr}$  is a correction factor that is dependent on a current operating point of the

17                    power train, and  
18         $M_{pm}$         is the torque being transmitted by the prime mover,  
19                    (b) ascertaining the magnitude of the force to be applied to the clutch for  
20        the transmission of a predetermined torque, and  
21                    (c) applying the thus ascertained force to the clutch,  
22                    ~~with attendant automatic selection of wherein~~ the slip between the  
23        output and input elements adjusts itself automatically as a function of the torque  
24        dividing factor  $k_e$  and possible deviations of an individual power train from an ideal  
25        behavior are corrected by compensation for eventual departures from the desired  
26        ~~torque transmission, as a function of the correction factor  $k_{corr}$  due to the~~  
27        ~~characteristics of the selected power train.~~

1                    28. (currently amended) A method of operating a torque transmitting  
2        apparatus, ~~particularly in a power train of a motor vehicle~~, which receives torque  
3        from a rotary output element of a prime mover, ~~such as a combustion engine~~, and  
4        transmits torque to a rotary input element of an automatic transmission, wherein a  
5        hydrokinetic torque converter is arranged to transmit torque between the output  
6        and input elements in parallel with a slip clutch and wherein the magnitude of  
7        torque being transmitted by the clutch is ~~selectively variable~~ detectable by a  
8        monitoring device in conjunction with a central computer unit, comprising the steps  
9        of  
10                    (a) ascertaining the magnitude of torque  $M_{clutch}$  to be transmitted by the  
11        clutch in dependency upon the operating condition of the torque transmitting

12 apparatus in accordance with the equation  
13  $M_{\text{clutch}} = k_e \cdot k_{\text{corr}} \cdot M_{\text{pm}}$ , wherein  $k_e = k_{\text{me}}$   
14  $k_e = k_{\text{me}}$  ~~is denoting~~ a torque dividing factor which is dependent only upon the  
15 RPM of the output element of the prime mover and the magnitude of  
16 torque being transmitted by the output element of the prime mover,  
17  $k_{\text{corr}}$  is a correction factor that is dependent on a current operating point of the  
18 power train, and  
19  $M_{\text{pm}}$  is the torque being transmitted by the prime mover,  
20 (b) ascertaining the magnitude of the force to be applied to the clutch for  
21 the transmission of a predetermined torque, and  
22 (c) applying the thus ascertained force to the clutch,  
23 ~~with attendant automatic selection of wherein~~ the slip between the  
24 output and input elements adjusts itself automatically as a function of the torque  
25 dividing factor  $k_e$  and possible deviations of an individual power train from an ideal  
26 behavior are corrected by compensation for eventual departures from the desired  
27 torque transmission, as a function of the correction factor  $k_{\text{corr}}$ , due to the  
28 characteristics of the selected power train.

1 29. (currently amended) A method of operating a torque transmitting  
2 apparatus which receives torque from a rotary output element of a prime mover;  
3 ~~such as a combustion engine~~, and transmits torque to a rotary input element of an  
4 automatic transmission in a power train of a vehicle, wherein a hydrokinetic torque  
5 converter is arranged to transmit torque between the output and input elements in

6 parallel with a slip clutch, and wherein the magnitude of torque being transmitted by  
7 the clutch is variable by a pressure differential between two bodies of a hydraulic  
8 fluid one of which is confined in a first compartment between a housing of the  
9 torque converter and the slip clutch and the other of which is confined in a separate  
10 second compartment between the housing and the clutch, and wherein the  
11 pressure differential is variable detectable by a monitoring unit in conjunction with a  
12 central computer unit and, and wherein the application of force to, and hence the  
13 magnitude of torque being transmitted by, the clutch is ~~selectively regulatable~~  
14 controllable by the computer unit, comprising the steps of  
15 (A) determining the RPM of said output element,  
16 (B) ascertaining the magnitude of torque to be transmitted by the clutch  
17 in dependency upon the operating condition of the power train in accordance with  
18 the equation  $M_{clutch} = k_e \cdot k_{corr} \cdot M_{pm}$ , wherein  $k_e = k_{me}$  denoting is a torque dividing  
19 factor which satisfies at least one of the requirements including (a) at least  
20 substantial constancy within the entire operating range of the power train, (b)  
21 independence from a characteristic field of the prime mover, (c) dependency  
22 exclusively upon the RPM of the output element of the prime mover, and (d)  
23 dependency upon the RPM of the prime mover and the magnitude of torque being  
24 transmitted by the output element,  $k_{corr}$  is a correction factor,  $M_{clutch}$  is the torque  
25 being transmitted by the clutch and  $M_{pm}$  is the torque being transmitted by the  
26 rotary output element of the prime mover,  
27 (C) ascertaining the magnitude of the force to be applied to the clutch for  
28 the transmission of a predetermined torque, and

29                   (D) applying the thus ascertained force to the clutch,  
30    ~~with attendant automatic selection of wherein~~ the slip between the output and input  
31    elements adjusts itself automatically as a function of the torque dividing factor  $k_e$   
32    and possible deviations of an individual power train from an ideal behavior are  
33    corrected by compensation for eventual departures from the desired torque  
34    ~~transmission, as a function of the correction factor  $k_{corr}$ , due to the characteristics~~  
35    ~~of the selected power train~~ ascertaining the magnitude of the force to be applied to  
36    the clutch for the transmission of a predetermined torque, and applying the thus  
37    ascertained force to the clutch with attendant automatic selection of the slip  
38    between the output and input elements as a function of the torque dividing factor  $k_e$   
39    and compensation for eventual departures from the desired torque transmission, as  
40    a function of the correction factor  $k_{corr}$ , due to the characteristics of the selected  
41    power train.

1                   30. (original) The method of claim 29, wherein the prime mover is a  
2    combustion engine the operating condition of which is dependent upon the RPM of  
3    the output element and the position of a throttle control lever of the vehicle.

1                   31. (original) The method of claim 29, wherein the prime mover is a  
2    combustion engine the operating condition of which is dependent upon the RPM of  
3    the output element and the subatmospheric pressure in a suction pipe of the  
4    engine.



1                   32. (original) The method of claim 29, wherein the prime mover is a  
2 combustion engine the operating condition of which is dependent upon the RPM of  
3 the output element and the duration of fuel injection into the engine.

1                   33. (currently amended) The method of claim 29, wherein in response  
2 to a change of the torque being transmitted by the power train [further comprising  
3 the step of selecting in the central computer unit that] a new torque [which is] to be  
4 transmitted by the clutch is implemented through the following measures [in  
5 response to changes of the torque being transmitted by the power train in  
6 accordance with the following undertakings]: (A) advance determination of a  
7 parameter X which [is indicative of] determines the torque being transmitted by the  
8 clutch at an instant  $t_{n+1}$  after the elapse of a monitoring interval and [which is  
9 ascertained] in accordance with a function [excluding at least one undesirable  
10 phenomenon, such as] that excludes undesirable phenomena including at least a  
11 blocking of the clutch, (B) determination of a gradient  $\Delta X$  which is required to  
12 arrive at a desired value of the parameter X after elapse of an interval  $\Delta t$ , (C)  
13 applying the thus determined gradient  $\Delta X$  with a hydraulic system including a  
14 [proportionality] proportional regulation wherein a parameter includes a pressure  
15 differential  $\Delta P$  established in advance between bodies of a hydraulic fluid at  
16 opposite sides of a pressure plate of the clutch in a housing of the torque converter  
17 in accordance with the equation

18                   
$$[\Delta P_{n+1} = (1-\beta) \cdot \Delta P_{\text{desired}} + \beta \cdot P_n]$$

19                    $\Delta P_{n+1} = (1-\beta) \cdot \Delta P_{\text{desired}} + \beta \cdot P_n$ , wherein  $\beta = f(T_v, t)$ , and

20 (D) repeating the steps (A), (B) and (C) until the parameter X at least closely  
21 approximates the desired parameter.

1 34. (currently amended) The method of claim 29, wherein further in  
2 response to changes of the torque being transmitted by the power train comprising  
3 ~~the step of selecting in the central computer unit that a new torque which is to be~~  
4 ~~transmitted by the clutch is implemented through the following measures ,in~~  
5 ~~response to changes of the torque being transmitted by the power train, in~~  
6 ~~accordance with the following undertakings:~~

7 (A) determining a gradient  $\Delta X$  of a parameter X which is indicative of  
8 determines the torque being transmitted by the clutch ~~and is ascertained in~~  
9 ~~accordance with a function excluding at least one undesirable phenomenon such~~  
10 ~~as that excludes undesirable phenomena including at least a short-lasting blocking~~  
11 ~~of the clutch,~~

12 (B) applying the gradient  $\Delta X$  with a hydraulic system, wherein the a  
13 gradient  $\Delta \Delta P$  is indicative of a pressure differential  $\Delta P$  between two bodies of a  
14 hydraulic fluid at opposite sides of a pressure plate of the clutch in a housing of the  
15 torque converter ~~and is arrived at in accordance with the equation~~  
16  $\Delta \Delta P = C_1 \cdot (\Delta P_{\text{desired}} - \Delta P_n)$ , wherein  $C_1$  is a proportionality factor, and

17 (C) repeating the steps (A) and (B) until the parameter X at least  
18 approximates a desired value.

1 35. (currently amended) The method of claim 29, wherein when a

2 reduction of torque being transmitted by the apparatus ~~is likely to develop~~ can be  
3 predicted as a result of at least one of a plurality of occurrences including shifting of  
4 the transmission into a different drive ratio and attachment of at least one  
5 aggregate to an output element of the transmission and ~~wherein~~ said predicted  
6 reduction of torque ~~is likely to entail~~ can cause short-lasting blockage of the clutch,  
7 the method further comprises ~~comprising the steps~~ step of reducing the magnitude  
8 of torque being transmitted by the clutch ~~by including at least one of the following~~  
9 ~~undertakings:~~ (A) reducing the factor  $k_e$  by a predetermined value, and thereupon  
10 gradually increasing each reduced factor as a function of time to a value level  
11 where the amount of the torque being transmitted by the clutch is compatible with  
12 adequate ~~which ensures~~ insulation of the transmission from vibrations and  
13 economical fuel consumption by the prime mover..

1 36. (currently amended) The method of claim 29, wherein when a  
2 reduction of torque being transmitted by the apparatus ~~is likely to develop~~ can be  
3 predicted as a result of at least one of a plurality of occurrences including shifting of  
4 the transmission into a different drive ratio and attachment of at least one  
5 aggregate to an output element of the transmission and ~~wherein~~ said predicted  
6 reduction of torque ~~is likely to entail~~ can cause short-lasting blockage of the clutch,  
7 the method further comprises ~~comprising the steps~~ step of reducing the magnitude  
8 of torque being transmitted by the clutch ~~including~~ through at least one of the  
9 following measures ~~undertakings:~~ (A) reducing the factor  $k_e$  by a predetermined  
10 value, and (B) reducing the factor  $k_{corr}$  by a predetermined value and thereupon

11 increasing each reduced factor as a function of time to a value level where the  
12 amount of the torque being transmitted by the clutch is compatible with adequate  
13 ~~which ensures~~ insulation of the transmission from vibrations and economical fuel  
14 consumption by the prime mover.

1 37. (currently amended) The method of claim 29, wherein the factor  
2  $K_{corr}$  is indicative of [the selected] a power train [in the] of a specific vehicle, and  
3 wherein [and further comprising] the steps [of] for selecting the factor  $k_{corr}$  to  
4 compensate for [eventual departures] deviations of the characteristics of [the  
5 selected] said power train of the specific vehicle from desired characteristics  
6 [including] include:

7 (a) monitoring [that] the slip of the clutch [which develops] in a  
8 predetermined [quasi] substantially stationary range of operation of the apparatus  
9 with a time delay which is sufficient to prevent the transmission of fluctuations of  
10 transmitted torque,

11 (c) comparing the monitored slip with a reference value which is  
12 selected to ensure optimal insulation of the transmission from vibrations and  
13 economical fuel consumption by the prime mover, and

14 (d) altering the slip of the clutch when the monitored slip departs from  
15 the reference value.

1 38. (currently amended) The method of claim 29, further comprising the  
2 step steps of (a) detecting an impending acceleration of the prime mover based on

3 a throttle valve position, and (b) if an impending acceleration is detected, reducing  
4 at least one of the factors  $k_e$  and  $k_{corr}$  in response to detected indication of intended  
5 acceleration of the prime mover, such as by a change of the position of a throttle  
6 control lever of the vehicle, with attendant increase of so that the slip of the clutch  
7 and the establishment of additional spare torque transmittable by the torque  
8 converter increases and the torque boost offered by the torque converter is  
9 available as an additional torque reserve.

1 39. (currently amended) The method of claim 29, wherein the  
2 transmission has a plurality of drive ratios and the torque-transmitting apparatus  
3 has a combined slip0 resulting from said regulating step comprises utilizing the slip  
4 of the clutch and from a less than perfect torque-transmitting efficiency of the  
5 torque converter, and wherein at each of said drive ratios said combined slip is  
6 determined primarily by the slip of the clutch, so that as a primary factor and the  
7 efficiency of the torque converter as a secondary becomes a less important factor  
8 for transmission of torque from the rotary output element to the rotary input element  
9 to thus permit the utilization of a so that the torque converter having a can be  
10 designed for a wide torque conversion range.

Claims 40 to 101 canceled

1 102. (New) The method of claim 2, wherein the torque-apportioning  
2 factor  $k_{me}$  is a preselected substantially constant factor.